

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P561282

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561282  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1STD-50-UNV-81-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

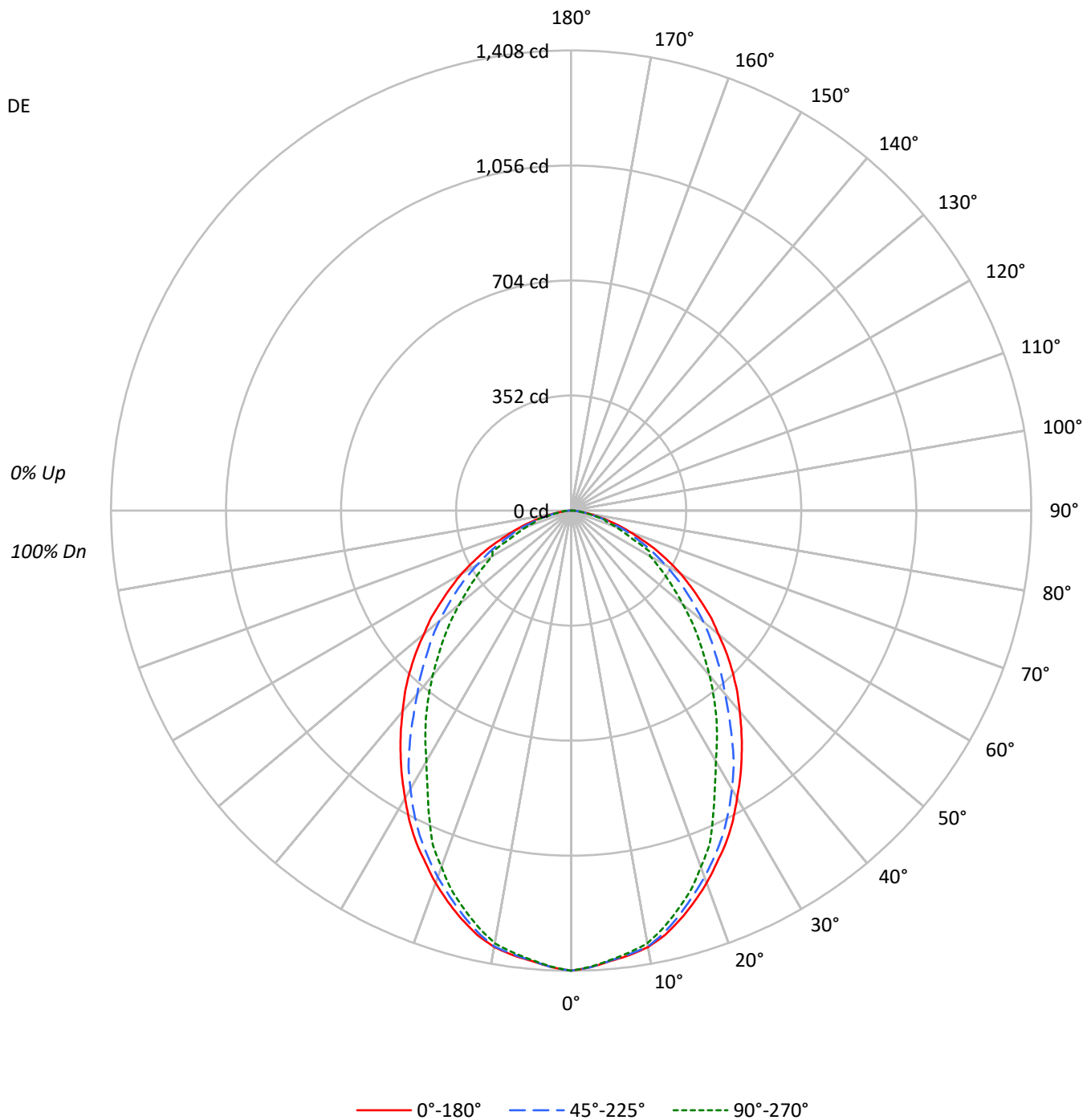
Lumens per Lamp: N/A  
Luminaire Lumens: 2764.0 lumens  
Efficiency: N/A  
Efficacy: 83.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3789	3789	3789
5°	3737	3733	3729
10°	3705	3700	3674
15°	3605	3569	3519
20°	3472	3417	3323
25°	3330	3257	3054
30°	3156	3055	2751
35°	2989	2823	2545
40°	2819	2573	2316
45°	2657	2379	2094
50°	2460	2208	1867
55°	2275	2001	1673
60°	2085	1787	1498
65°	1834	1565	1326
70°	1511	1371	1127
75°	1202	1049	1100
80°	807	756	707
85°	503	602	704

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2657 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.1	4.7
10°-20°	359.7	13.0
20°-30°	498.0	18.0
30°-40°	531.0	19.2
40°-50°	484.4	17.5
50°-60°	379.5	13.7
60°-70°	247.3	8.9
70°-80°	109.6	4.0
80°-90°	23.5	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	988.7	35.8
0°-40°	1519.7	55.0
0°-60°	2383.6	86.2
0°-90°	2764.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2764.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1408	1408	1408	1408	1408	
5°	1384	1382	1382	1380	1380	131
15°	1294	1294	1281	1268	1263	364
25°	1122	1115	1097	1058	1029	515
35°	910	903	859	794	775	569
45°	698	684	625	573	550	538
55°	485	470	426	376	356	435
65°	288	272	246	251	208	284
75°	116	107	101	96	106	124
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1407.9	1407.9	1407.9	1407.9	1407.9
2.5°	1398.2	1398.2	1398.2	1396.6	1396.6
5°	1383.5	1381.9	1381.9	1380.3	1380.3
7.5°	1372.1	1370.5	1368.9	1367.3	1364.0
10°	1355.9	1355.9	1354.2	1346.1	1344.5
12.5°	1329.8	1328.2	1321.7	1310.3	1307.0
15°	1294.0	1294.0	1281.0	1268.0	1263.1
17.5°	1254.9	1253.3	1237.0	1224.0	1217.5
20°	1212.6	1209.4	1193.1	1171.9	1160.5
22.5°	1165.4	1165.4	1145.9	1118.2	1106.8
25°	1121.5	1115.0	1097.1	1058.0	1028.7
27.5°	1071.0	1061.2	1041.7	986.4	952.2
30°	1015.7	1010.8	983.1	911.5	885.5
32.5°	963.6	955.4	926.2	851.3	830.1
35°	909.9	903.4	859.4	794.3	774.8
37.5°	856.2	848.0	792.7	740.6	716.2
40°	802.4	792.7	732.5	685.3	659.2
42.5°	752.0	739.0	680.4	629.9	600.6
45°	698.3	683.6	625.0	572.9	550.2
47.5°	644.6	631.5	577.8	524.1	498.1
50°	587.6	576.2	527.4	473.7	446.0
52.5°	540.4	522.5	475.3	421.6	398.8
55°	485.0	470.4	426.5	376.0	356.5
57.5°	434.6	419.9	379.2	332.0	315.8
60°	387.4	366.2	332.0	291.4	278.3
62.5°	335.3	319.0	289.7	255.5	271.8
65°	288.1	271.8	245.8	250.7	208.3
67.5°	236.0	227.9	205.1	182.3	175.8
70°	192.1	182.3	174.2	149.7	143.2
72.5°	153.0	143.2	131.8	118.8	113.9
75°	115.6	107.4	100.9	96.0	105.8
77.5°	79.8	76.5	71.6	66.7	65.1
80°	52.1	50.5	48.8	47.2	45.6
82.5°	30.9	30.9	30.9	30.9	30.9
85°	16.3	17.9	19.5	21.2	22.8
87.5°	9.8	9.8	11.4	13.0	14.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)